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Case Report

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Rectal perforation due to malignancy as a rare cause of acute abdomen in a third trimester pregnant patient: a case report

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ABSTRACT

Anatomical and physiological changes during pregnancy may complicate diagnosis and treatment. While the cause of non-obstetric acute abdomen is encountered in one in 500 pregnancies, the most common one may be acute appendicitis. The incidence of colorectal cancer (CRC) during pregnancy is 0.002%. Common symptoms, such as abdominal pain, nausea, vomiting, and changes in bowel movements, are often observed in a regular pregnancy. Thus, most colorectal cases are overlooked and diagnosed in advanced stages associated with a poor prognosis. This case report presents a 31-year-old female patient at 37 weeks of gestation who applied with an acute abdomen, underwent emergency explorative laparotomy, had a 2 cm perforation detected in the rectum, and was referred to neoadjuvant chemo-radiotherapy due to perforation due to malignancy detected in the examinations performed in the postoperative follow-up. The relevant literature notes that colorectal cancer is rarely seen among expectant mothers. It should be suspected in the diagnosis among patients with gastrointestinal complaints for whom conservative treatment has failed. It should also be noted that bowel perforation, a rare complication of colorectal cancer, may also be present in emergency department applications with an acute abdomen.

Keywords: Pregnancy, colorectal cancer, perforation

INTRODUCTION

Acute abdomen continues to pose a challenge regarding diagnosis and treatment in pregnancy. Thus, physicians had better be aware of the non-obstetric causes of abdominal pain among pregnant patients and the atypical presentations of surgical emergencies. Colorectal cancer (CRC) is a rare but potentially fatal condition complicating pregnancy. The incidence peaks among patients aged 50 years, but contemporary research reports that it is becoming more frequent among those younger than 40 years.[1] It can also occur during pregnancy, as its incidence increases among younger women. Perforations in CRC are rare but severe complications with a mortality rate of 30-40%.[2] The present study aims to present both a rare case of rectal cancer and a rare case of rectal perforation due to malignancy as a cause of acute abdomen in third-trimester pregnancy.

CASE

A 31-year-old female patient at 37 weeks of gestation applied to the emergency department of the obstetrics clinic with complaints of sudden onset of abdominal pain and vaginal bleeding. General surgery was also consulted on concomitant severe abdominal pain.

In her physical examination, her blood pressure was 110/70 mmHg, her pulse was 90/min, and the Glasgow Coma Scale score was 15. She was conscious, oriented, and cooperative. Her abdominal examination yielded tenderness, defense, and rebound in the bilateral lower quadrants and normal stool contamination on the rectal touch.

The laboratory findings were as follows: While blood cell (WBC) = 22.2x10 (20.8 Neu), Hemoglobin (HBG) = 9.1 mg/dL, C-reactive protein (CRP) = 60 mg/l, Creatinine (CRE) = 0.6, Urea = 20, Urinalysis Test (UAT) = Leukocyte esterase 1+ (6 leukocytes), Nitrite = negative, international normalized ratio (INR) = 1.2.

The abdominal USG performed under emergency conditions yielded nothing in the uterine cavity except FHB+ live fetus. The emergency abdominal MRI showed minimal smearing-style free liquid in the right and left paracolic areas in the liver and in the pelvis, irregular wall thickening reaching 14 mm in the widest part of the rectosigmoid section, and diffusion restriction in this area.

Accordingly, an emergency operation was planned for the patient with an acute abdomen and whose pregnancy reached terms. Purulent content mixed with stool in all quadrants, particularly in Douglas, was discovered in the patient taken

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to an emergency cesarean section in the obstetrics clinic. After washing, a rectal perforation of approximately 2 cm was observed at the level of the peritoneal reflection, and Hartmann's procedure was performed on the patient due to the intense intrabdominal contamination.

Etiological investigations continued in the postoperative follow-up. In abdominal tomography, there were asymmetrical wall thickening up to 28 mm on the left lateral wall in the thickest part of the rectum along the long segment and multiple lymph nodes around the rectum, the largest of which reaches 14×9 mm in size. Pelvis MRI resulted in tumor wall thickening surrounding the rectum wall in the approximately 12 cm segment in the rectosigmoid region. It was measured at 32 mm where it was most emergent (**Figure 1**). Yet, the relationship of tumor tissue with mesolectal fascia and fatty tissue could not be evaluated with this examination. No pathologically sized lymph node was detected. In the colonoscopy, a broad-based ulcerovegetan mass protruding into the lumen and surrounding 50% of the lumen at 10 cm from the anal verge was observed, and biopsies were taken. The patient, whose drain was terminated during the follow-ups and who had normal findings in further physical examinations, tolerated the regimen, and had discharge from the ostomy, was referred to the oncology clinic for neoadjuvant chemo-radiotherapy.

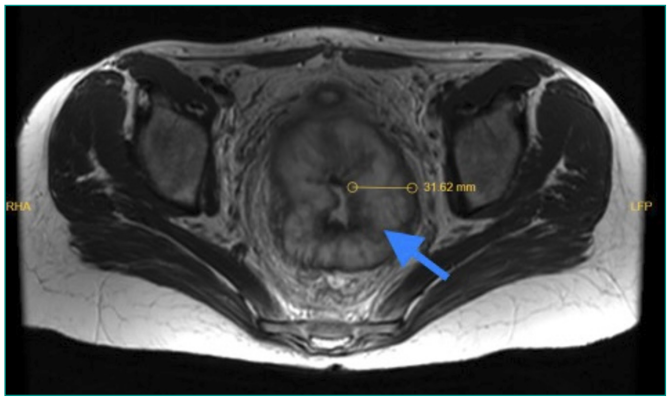

Figure 1. Irregular wall thickening in the rectum in pelvic MRI (blue arrow)

DISCUSSION

Physiological and anatomical changes during pregnancy may lead to diagnostic difficulties among patients presenting with acute abdomen due to the unpredictability of obstetric complications and changes in physical examination findings, laboratory findings, and imaging methods.[3] The incidence of an acute abdomen during pregnancy is often reported to be one in 500.[4] The causes of abdominal pain can be divided into obstetric and non-obstetric causes.[4] The most common non-obstetric cause is acute appendicitis, corresponding to 25-30% of expectant mothers undergoing surgery.[4] Other causes include intestinal obstructions, acute cholecystitis, inflammatory bowel diseases, peptic ulcer, and acute pancreatitis.[4] Of these, intestinal perforation is a life-threatening condition despite being extremely rare.[5] It can lead to adverse maternal and fetal outcomes such as miscarriage, premature birth, and intrauterine death.[5]

USG is a safe, first-choice, and easily accessible imagining method among those to be utilized during pregnancy. However, intra-abdominal organs may be displaced with the enlargement of the uterus, making USG imaging difficult and reducing sensitivity.[6] However, high accuracy rates are reported for MRI when compared with medical follow-ups and post-surgical diagnoses.[7] In the present case, an acute abdomen was considered as a result of physical examination and laboratory findings, and MRI was planned as diagnostic results could not be achieved with USG. As a result of the examinations, the patient was taken into operation since being in the third trimester, and the fetus had reached the required maturity. The investigation of the cause of the postoperative perforation pointed out rectal cancer.

The literature shows the most common causes of colon perforations as colon diverticulum with a rate of 58-63% and CRC with a rate of 14-21%.[8] The incidence of cancer in pregnancy varies between 0.02% and 0.1%, and CRC is one of the eight most common malignant neoplasms in pregnancy.[9] Despite being rare among the causes of acute abdomen, perforated CRCs are characterized by high mortality rates.[2] CRC is not considered in the initial diagnosis among young patients without family history and predisposing factors. Yet, the present case may be regarded as a robust example that CRC can be encountered in young patients without known risk factors.

Now, about one out of every ten new CRC diagnoses corresponds to individuals aged 50 years and younger.[10] The relevant research also documents that the incidence of CRC at young ages may increase in the coming years.

CONCLUSION

Given the relevant research and its increasing incidence, it should be noted that CRC may be encountered in young cases and that CRC perforation had better be included among the preliminary diagnoses in gastrointestinal system perforations in rare cases. Surgeons and obstetricians may need to act in harmony and intervene early with a multidisciplinary approach to pregnant women demonstrating the picture of an acute abdomen due to the physiological and anatomical changes during pregnancy and difficulties in the diagnosis and treatment processes.

ETHICAL DECLARATIONS

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

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REFERENCES

1. Kraljevic M, Hoffmann H, Knipprath A ve Von Holzen U. Obstructing adenocarcinoma of the descending colon in a 31-year-old pregnant woman. *Int J Surg Case Rep.* 2014; 5(12): 958-960.
2. Kriwanek S, Armbruster C, Dittrich K, Beckerhinn P. Perforated colorectal cancer. *Dis Colon Rectum.* 1996; 39: 1409-1414.
3. Çolak B, Yormaz S, Ece İ, Kafalı E, Acar F and Şahin M. "A rare cause of acute abdomen in pregnancy: small bowel ischemia". *Abant Med J.* 2017; 6(2); 64-66.
4. Agustin G, Majerovic M. Non obstetrical acute abdomen during pregnancy. *Eur J Obstet Gynecol Reprod Biol.* 2007; 1231: 4-12.

5. Cuhang MT, Chen TS.Bowel obstruction and perforation during pregnancy:case report and literatüre review. *Taiwanese J Obstetr Gynecol*. 2021; 927-930.
6. Kennesy A. Assessment of acute abdominal pain in the pregnant patient. *Semin Ultrasound*. CT MR 2000; 21: 64-77.
7. Birchard KR, Brown MA, Hyslop WB, Firat Z, Semelka RC. MRI of acute abdominal and pelvic pain in pragnant patient. *AJR Am J Roentgenol*. 2005; 184: 452-8.
8. Otani K, Kawai K, Hata K, et al. Colon cancer with perforation. *Surg Today*. 2019; 49: 15-20.
9. Salani R, Billingsley CC, Crafton SM. Cancer and pregnancy: an overview for obstetricians an gynecologists. *Am J Obstet Gynecol*. 2014; 7-14.
10. Stoffel EM, Murphy CC. Genç erişkinlerde kolon ve rektum kanserlerinin artan insidansının epidemiyolojisi ve mekanizmaları. *Gastroenteroloji*. 2020; 158(2): 341-353.

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